

Configuring the Natural Development Server

This document describes how to configure a Natural Development Server for OS/390.

The following topics are covered:

- Configuration Requirements
 - Configuration File
 - Configuration Parameters
 - Server Datasets
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Configuration Requirements

A Natural Development Server requires the following OS/390 language environment parameter configuration:

Parameter	Definition	
POSIX(ON)	Enables a Natural Development Server to access the POSIX functionality of OS/390. If you start a Natural Development Server server with POSIX(OFF), it terminates immediately with a user abend U4093 and the system message EDC5167. IBM supplies the default OFF.	
TRAP(ON,NOSPIE)	Defines the abend handling of the LE/370 environment: ON enables the Language Environment condition handler. NOSPIE specifies that the Language Environment will handle program interrupts and abends via an ESTAE, that is, the Natural abend handler will receive control to handle program interrupts and abends.	
TERMTHDACT(UADUMP)	Defines the level of information that is produced in case of an abend. The option UADUMP generates a Language Environment CEEDUMP and system dump of the user address space. The CEEDUMP does not contain the Natural relevant storage areas. IBM supplies the default (TRACE).	
ENVAR(TZ=)	The ENVAR option enables you to set UNIX environment variables. The only environment variable applicable for the Natural Development Server is TZ (time zone). This variable allows you to adjust the timestamp within the Natural Development Server's trace file to your local time. Example: ENVAR(TZ=CET-1DST) CET - 1 hour daylight saving time	

You can set the OS/390 language environment parameters:

- With the PARM parameter specified in the EXEC card of the Natural Development Server startup job.
The length of the options is limited by the maximum length of the PARM parameter.
- Assemble an LE/370 runtime option module CEEUOPT and link it to the Natural Development Server load module.

Configuration File

A configuration file is allocated to the DD-name <serverid>C (e.g. NDVS1C) or STGCONFIG alternatively.

The configuration file is a text file located on a dataset or on an HFS file under OS/390 . It contains the server configuration parameters in form of a *keyword=value* syntax.

Configuration Parameters

The following configuration parameters are available:

DBG_CODEPAGE | FRONTEND_OPTIONS | FRONTEND_PARAMETER | INITIAL_USERID |
THREAD_NUMBER | FRONTEND_NAME | KEEP_TCB | THREAD_SIZE | TRACE_LEVEL |
SESSION_PARAMETER | DEFAULT_PROFILE | HOST_NAME | PORT_NUMBER

DBG_CODEPAGE

This optional configuration parameter specifies which translation table is used by the remote debugger. By default, the remote debugger uses the code page IBM-1047 contrary to NDV which uses TABA1/2.

Possible values:

USER	Use the Natural translation tables TABA1/2.
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Default Value none

Example `DBG_CODEPAGE=USER`

FRONTEND_OPTIONS

This configuration parameter specifies additional options for the Natural front-end.

Possible Options:

01	Do not use the roll server.
02	Clean up roll file at server termination.
04	Write GTF trace.
08	Write ETRACE.
10	Front-end automatic termination.
20	Write console information.

You may combine the above options as desired in that you add their values and set the result as shown in the example below.

Default Value 01

Example `FRONTEND_OPTIONS=07` The setting in the example enables the Options 01, 02 and 04.

FRONTEND_PARAMETER

This optional configuration parameter contains additional Natural front-end parameters as specified in the Startup Parameter Area.

You can define multiple parameters. Each parameter specification is a pair of 8-character strings, the first containing the parameter keyword and the second the parameter value.

For further information, see the *Natural Operations for Mainframe documentation*, Natural in Batch Mode.

Default Value none

Example FRONTEND_PARAMETER="MSGCLASSX"

The setting in the example specifies that the default output class for CMPPRINT is "X".

INITIAL_USERID

At server initialization, the Natural Development Server creates a temporary Natural session to obtain the properties of the installed Natural environment.

This configuration parameter specifies the user ID to be used for this Natural session.

The specified value must not exceed 8 characters, otherwise it is truncated.

Default Value STARGATE

Example INITIAL_USERID=NDVINITU

THREAD_NUMBER

This configuration parameter specifies the number of physical storage threads to be allocated by the Natural front-end, that is, the number of sessions that can be executed in parallel.

Note:

This number does not limit the number of sessions within the server, but the number of sessions which can be in execution status concurrently. The number of sessions is limited by the size of the Natural swap medium.

Default Value 3

Example THREAD_NUMBER=5

FRONTEND_NAME

This configuration parameter specifies the name of the Natural front-end to be used to start a Natural session. The front-end resides on a PDS member.

Default Value none

Example FRONTEND_NAME=NAT315SV

KEEP_TCB

By default, the remote Natural session of a mapped environment terminates its TCB whenever you switch the focus within Natural Studio to a different mapped environment. If you toggle the focus back, the remote session is dispatched using a different TCB.

The maximum number of active TCBs is equal to the number of connected clients.

The configuration parameter KEEP_TCB specifies whether the remote Natural session should use the same TCB during its entire lifetime. This is required if you want to access DB2. It could also be required if you access 3GL programs which need to be executed under the same TCB for successive calls.

Default Value NO

Example KEEP_TCB=YES

THREAD_SIZE

This configuration parameter specifies the size (in KB) of each physical storage thread which contains the Natural session data at execution time.

Default Value 500

Example THREAD_SIZE=800

TRACE_LEVEL

See Trace Level details in the section Natural Development Server on Mainframe.

Default Value 0

Example TRACE_LEVEL=0x00000011

The setting in the example switches on Bits 31 and 27.

DEFAULT_PROFILE

This optional configuration parameter defines a default profile.

Specifying a parameter string in the Map Environment window of Natural Studio overwrites this default profile.

Default Value none

Example DEFAULT_PROFILE=RDEVS,10,930

The setting in the example defines that, if no parameters are defined in the Map Environment window, the session is started with the parameter PROFILE=(RDEVS10,930).

SESSION_PARAMETER

This optional configuration parameter defines session parameters that precede the parameter string either specified in the Map Environment window or defined by default by the configuration parameter DEFAULT_PROFILE.

Default Value none

Example SESSION_PARAMETER=FNAT=(10,930)

The setting in the example defines that every session on this Natural Development Server is started with the session parameter FNAT=(10,930) appended to the user-specified parameters or the definitions in DEFAULT_PROFILE.

HOST_NAME

This optional configuration parameter is necessary only if the server host supports multiple TCP/IP stacks.

If HOST_NAME is specified, the server listens on the particular stack specified by HOST_NAME, otherwise the server listens on all stacks.

Default Value none

Example HOST_NAME=node1

or

HOST_NAME=157.189.160.55

PORT_NUMBER

This configuration parameter defines the TCP/IP port number under which the server can be connected.

Default Value none

Example PORT_NUMBER=3140

Configuration File Example:

```
# This is a comment
SESSION_PARAMETER=profile=(stgqa,10,930) fuser=(10,32)
DEFAULT_PROFILE=DEFPROF
THREAD_NUMBER=2
THREAD_SIZE=700
FRONTEND_NAME=NATOS31L      # and another comment
PORT_NUMBER=4711
```

Server Datasets

The Natural Development Server requires the following datasets:

STGCONFIG	Defines the server configuration file.
STGTRACE	The server trace output.
STGSTDO	The stdo dataset.
STGSTDE	The stde error output.

Alternately, you can qualify each dataset name by the server ID.

NDVS1C	Defines the server configuration file for the server NDVS1.
NDVS1T	The server trace output for the server NDVS1.
NDVS1O	The stdo dataset for the server NDVS1.
NDVS1E	The stde error output for the server NDVS1.